

(Amended) 15. A resistor array comprising:

a plurality of resistors each comprising a metallic bulk base;

5 a plurality of electrodes composed of conductive material
disposed directly on said metallic bulk base wherein said
metallic bulk base between every two of said electrodes
having a precisely controlled distance for providing a
precisely defined resistance for each of said resistors.

10

(Amended) 16. The resistor array of claim 15 further comprising:

at least an electrode layer of said conductive material
disposed on each of said electrodes to form an electrode for
each of said electrode columns.

15

(Amended) 17. The resistor array of claim 15 further comprising:

a plurality of scribing lines disposed between said resistors
for scribing said resistor array into a plurality of resistors
each comprising at least two electrodes.

20

(Amended) 18. The resistor array of claim 15 wherein:

said metallic bulk base of said resistors composed of a
nickel-copper alloy.

25

September 30, 2002

(Amended) 19. The resistor array of claim 15 wherein:

said electrodes further comprises a copper layer and a tin-lead alloy layer disposed on each of said electrode columns.

5

(Amended) 20. The resistor array of claim 15 wherein:

said precisely defined resistance for each of said resistors ranging between one milli-ohm to one ohm.

10

(Amended) 21. The resistor array of claim 15 wherein:

said metallic bulk base of each of said plurality of resistors having a thickness ranging between 0.05 to 0.5 millimeters and a length ranging between 1.0 to 7.0 millimeters.

15

(Amended) 22. The resistor array of claim 15 wherein:

each of said plurality of electrodes disposed directly on said metallic bulk base having a width and length ranging between 0.1 to 3.2 millimeter, a height ranging between 0.05 to 0.5 millimeters and distance ranging between 0.4 to 6.2 millimeters between every two electrode columns.

20

25

September 30, 2002

(Amended) 23. A resistor array comprising:

a plurality of resistors each comprising a metallic bulk base;

5

a plurality of column-shaped electroplated electrodes
disposed directly on said metallic bulk base and having
precisely controlled distance between every two of said
electrodes for providing a precisely defined resistance for
each of said resistors.

10

(Amended) 24. The resistor array of claim 23 further comprising:

a plurality of scribing lines disposed between said resistors
for scribing said resistor array into a plurality of resistors
each comprising at least two electrodes.

15

(Amended) 25. The resistor array of claim 23 wherein:

said metallic bulk base of said resistors composed of a
nickel-copper alloy.

20

(Amended) 26. The resistor array of claim 23 wherein:

said plurality of column-shaped electroplated electrodes
disposed directly on said metallic bulk base further
comprises a copper layer and a tin-lead alloy layer.

25

September 30, 2002

(Amended) 27. The resistor array of claim 23 wherein:

said precisely defined resistance for each of said resistors
ranging between one milli-ohm to one ohm.

5

(Amended) 28. The resistor array of claim 23 wherein:

said metallic bulk base of each of said plurality of resistors
having a thickness ranging between 0.05 to 0.5 millimeters
and a length ranging between 1.0 to 7.0 millimeters.

10

(Amended) 29. The resistor array of claim 23 wherein:

each of said plurality of column-shaped electrodes disposed
directly on said metallic bulk base having a width and length
ranging between 0.1 to 3.2 millimeter, a height ranging between
0.05 to 0.5 millimeters and distance ranging between 0.4 to 6.2
millimeters between every two electrodes.

15

20

September 30, 2002

(Amended) 30. A resistor comprising:

a metallic bulk base;

5 at least two electrodes composed of a conductive material
disposed directly on said metallic bulk base and having
precisely controlled distance between said two electrodes for
providing a precisely defined resistance for said resistor.

*2
cont*

10 (Amended) 31. The resistor of claim 26 further comprising:

at least an electrode layer of said conductive material
disposed on each of said electrodes to form an electrode for
each of said electrode columns.

15

(Amended) 32. The resistor of claim 30 wherein:

said metallic bulk base composed of a nickel-copper alloy.

20

(Amended) 33. The resistor of claim 30 wherein:

said electrodes further comprises a copper layer and a tin-
lead alloy layer disposed on each of said electrode columns.

25

(Amended) 34. The resistor of claim 30 wherein:

said precisely defined resistance for said resistor ranging
between one milli-ohm to one ohm.

5

(Amended) 35. The resistor of claim 30 wherein:

said metallic bulk base of said resistor having a thickness
ranging between 0.05 to 0.5 millimeters and a length ranging
between 1.0 to 7.0 millimeters.

10

(Amended) 36. The resistor of claim 30 wherein:

each of said electrodes disposed directly on said metallic
bulk base having a width and length ranging between 0.1 to
3.2 millimeter, a height ranging between 0.05 to 0.5
millimeters and distance ranging between 0.4 to 6.2
millimeters between every two electrode columns.

15

20 (Amended) 37. A resistor comprising:

a metallic bulk base;

a least two column-shaped electroplated electrodes disposed
directly on said metallic bulk base and having precisely
controlled distance between said electrodes for providing a
precisely defined resistance for said resistor.

25

September 30, 2002

(Amended) 38. The resistor of claim 37 wherein:

said metallic bulk base of said resistor composed of a nickel-copper alloy.

5

(Amended) 39. The resistor of claim 37 wherein:

said column-shaped electroplated electrodes disposed directly on said metallic bulk base further comprises a copper layer and a tin-lead alloy layer.

10

(Amended) 40. The resistor of claim 37 wherein:

said precisely defined resistance for said resistor ranging between one milli-ohm to one ohm.

15

(Amended) 41. The resistor of claim 37 wherein:

said metallic bulk base of said resistor having a thickness ranging between 0.05 to 0.5 millimeters and a length ranging between 1.0 to 7.0 millimeters.

20

(Amended) 42. The resistor of claim 37 wherein:

each of said column-shaped electrodes disposed directly on said metallic bulk base having a width and length ranging between 0.1 to 3.2 millimeter, a height ranging between 0.05 to 0.5 millimeters and distance ranging between 0.4 to 6.2 millimeters between every two electrodes.

25

30

September 30, 2002